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FIRESIDE CHAT



Well, here it is, the July meeting. Time for all politically motivated people to get their act together. September means Elections! So, if you're thinking of running for something you might want to put together a little introductory article saying who you are and what you want to do!

Now, back to the ST's! we're still waiting for the two ST's that club members have ordered. I've heard that in some locations they are already out in the stores. So, I gave a call to Family-Computer Center and they say that locally July 8th is still the date. It looks like they will probably cost a little less, also. Now, here are a few other ST facts to iron out. As we all know, the ST will use a GEM operating system. This does NOT mean that the ST will run GEM software designed for the IBM PC and compatibles! A lot of people seem to think that, but it's not the case. A good comparison would be Atari 800/Apple/Commodore all using 6502. They can be modified with some work but they won't run each other's software. The ST is not going to be able to run AMODEM or AMIS.BBS or any other exisitng Atari Software. This is a whole new ball game now! At some point in time, I'm sure MACE will actively support the ST but first we have to see where the members' interest is. We don't want to become over-involved with something the majority of the membership is not interested in.

Moving on... watch for some changes in our Disk Library! We are going to upgrade the catalogs to include a brief program description and/or the source. We need volunteers to help do this. If you're interested, see the Librarian during this meeting!

Here are a couple of off the wall comments for ya. For those of you who read the August Antic, I have already called them and registered my complaint about the statement that MACE runs a BBCS bulletin board. As we all know, that was my venture and had nothing to do with the club. Antic, I'm sure, will correct it but they publish 3 months in advance. Well, at least while I was on the phone with them, I had my chuckle over their "great success story" of MPP. They went out of business, ya know!

And, another rumor - it's true. I run a PC BBS along with my Atari BBS. Besides my two Ataris I also own an AT&T PC-6300. So, look at the bright side - if you can't get me in chat on one, call the other! Until next month, Happy Computing!

Kirk

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MACE UNCLASSIFIEDS

WANTED: ANALOG Compendium programs on disk (set of 3). Cash or trade software.
FOR SALE: Powerpad Graphics tablet with software. Like new. $75/Offer or trade. Thom Bissell, Walled Lake, MI. (313) 669-4393

810 disk drive with cable & power pack. $125. Steve (313) 333-7113 evenings, 370-5035 days.

Donate your unused Atari hardware and software to the computer lab of the Brotherhood Christian Academy, Clawson, MI. Donations are tax-deductible. Pastor Rod Jones, (313) 583-1077.

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Submissions to the Journal can be mailed to the PO Box, uploaded to the MACE BBSs, any officer's BBS, or uploaded directly to the editor at 646-4455. Where possible, submissions should include a disk or tape file in AtariWriter or similar format and a working copy of the program. Specify format for screen dumps (AtariArtist, Koalapad, etc.). Authors whose submissions are published will receive a certificate good for a free disk or tape from the MACE library. Deadline for submissions is the first of each month.

GTIA
CHARACTER GRAPHICS

by Mike Portuesi

What would you say if I told you the Atari has a ten-color character graphics mode? And two sixteen-color character modes? All of this is possible with GTIA character graphics - using the special GTIA graphics modes with an ordinary text screen.

First, make sure your Atari has a GTIA chip. All XL and XE computers have this chip, as well as 400/800s made after January 1, 1982. If you don't know for sure, try the following test:

```
10 GRAPHICS 10
20 GOTO 20
```

A black screen means you have the GTIA graphics chip; a blue screen means you have the old CTIA chip. You can get a GTIA chip installed at any Atari service center.

In order to understand GTIA character graphics, you must know how the special GTIA graphics modes (GRAPHICS 9, 10 and 11) work as well. If you don't, a good reference for study in addition to this article is the series, "Atari Video Graphics and the New GTIA", by Craig Chamberlain in COMPUTE!'s First Book of Atari Graphics.

How GTIA Character Graphics Works

The normal GTIA modes (GRAPHICS 9, 10, and 11) are actually GRAPHICS 8 in disguise. By changing the top two bits in the player-missile priority register (location 623 decimal), the GTIA will display its special modes according to the following chart:

Top Two Bits In Priority Register (623)	Graphics Mode Displayed By GTIA
00	Mode 8
01	Mode 9
10	Mode 10
11	Mode 11

The trick to GTIA character graphics is simple: activate one of the special GTIA graphics modes in GRAPHICS 0. Because mode 0 has the same characteristics as mode 8, the GTIA modes will still work normally, with the exception that the computer is now in a character graphics mode instead of a standard (or bitmap) graphics mode. Program 1 is a demonstration of this technique. The program will place a row of custom characters on the screen in GRAPHICS 0. Press START to see what these same characters look like in mode 9. Note that the computer is not in GRAPHICS 9 - it is still in GRAPHICS 0, but the GTIA chip has been told to display mode 9. Press SELECT to see these characters in mode 10, and OPTION to see them in mode 11.

With GTIA character graphics, placing multicolored graphics on the screen is just a matter of redefining a character set and using ordinary PRINT statements. The advantage of this method is the small amount of memory it uses. A picture drawn in a standard GTIA mode requires about 8,000 bytes, while the same picture drawn with GTIA character graphics requires only about 1,000 bytes for the GRAPHICS 0 screen and another 1,000 bytes for the character set.

The Three Steps

There are three steps to using GTIA character graphics:

1. Design a character set with the different patterns and colors you will need.

2. In your BASIC program, load that character set into memory and switch to it. For the sake of brevity, this article assumes you know how to use redefinable character sets. If you don't, an excellent tutorial by David and Sandy Small can be found in the "Outpost: Atari" column in the January 1982 issue of Creative Computing.

3. POKE the correct number into location 623 decimal for the mode you want - 64 for mode 9, 128 for mode 10, or 192 for mode 11. If you are using player-missile graphics along with the GTIA modes, add the number for the mode you selected to the number you selected for

player-missile priority. For mode 9 graphics add 64, for mode 10 add 128, and for mode 11 add 192.

Designing GTIA Characters

Designing custom GTIA characters is not a difficult process. A GTIA character is designed on a grid two pixels across by eight down, rather than the eight by eight grid used in GRAPHICS 0. Each byte in the character definition controls the color of two pixels. Four bits are used to specify the color of a pixel, with the top four bits controlling the left pixel and the lower four bits controlling the right. To define a character, select the pattern of colors (or luminances if you will be using mode 9) you want on a two by eight grid. Then, for each pixel, take the number of the color you selected (same as the argument in the COLOR statement) and convert it to binary. This will be the pattern to produce that color on the display.

The GTIA Character Set Editor

Program 2 is a character set editor that will allow you to design custom GTIA characters using modes 9 or 11 and save your character sets on disk or cassette. It requires 32K of memory and a joystick. Program 3 is a short program that will take data files created by the character editor and produce DATA statements for use in your own programs.

When you run program 2, a grid will appear at the top of the screen along with a set of color bars. In the center of the screen will be the standard Atari character set as it looks with the GTIA modes activated, and at the bottom of the screen will be a window for status information. A bar-shaped cursor will be inside the grid. To change any of the pixels on the grid, move the cursor to the desired place and press the fire button on the joystick. If you would like to select a different color for editing, move the cursor off the bottom of the grid. A square-shaped cursor will appear on the line of color bars. Place the cursor on top of the color you wish to use and press the fire button. The program will indicate the color you have selected in the window at the bottom of the display. If you don't want to change the editing color, push up on the joystick. You will be returned to the edit mode.

Editor Functions

The OPTION, SELECT, and START keys each perform a different function as follows:

OPTION - Press this key to save your character set or to load a set you have previously created. A mini-menu will appear in the window at the bottom of the screen. Select either SAVE or LOAD by placing the cursor on top of your choice and pressing the fire button. Do the same to select either disk or cassette. If you are using disk, the program will prompt you for the name of the character set you wish to save or load. Enter your filename (the 'D:' prefix is not required, though you can use it anyway) and press RETURN. The "Quit Program" option ends the program and returns you to BASIC.

SELECT - Press this key to select the character you wish to edit. Move the cursor until it is on top of the character you wish to edit and press the fire button. The character will appear enlarged on the grid and will also appear in the center of the screen directly below the color bars. The character's internal character set number will be indicated at the bottom of the display. Note that this is <u>not</u> an ATASCII code number.

START - Press this key to switch between modes 9 and 11 and also to select colors or luminances for those modes. A mini-menu will appear. Make your selections by placing the cursor on top of your choice and pressing the fire button. If you selected the change color option, the program will allow you to select either primary color or primary luminance depending on what mode you are in. The "Exit" option does not end the program; it simply returns you to the edit mode.

Problems with the Editor

You are probably wondering why the program does not support character design in mode 10. It was originally intended to support all GTIA

modes, but the color register controlling the background color in mode 10 happens to be the same register controlling the color of Player 0. Because of this, the cursor was invisible whenever mode 10 was used. I tried to solve this problem using a different player for the cursor, but I found that player-playfield priorities still made the cursor invisible half the time. Also, because the grid is composed of three players placed next to each other, the background would still take on the color of one of the players and wash out the grid anyway. At this point I dropped support of mode 10 from the program. It is still possible to design mode 10 characters indirectly. To design mode 10 characters, never use a color number above 8. Each of the color numbers below 8 corresponds to the BASIC COLOR statement. For example, changing a pixel in a GTIA character to color number 5 would be the same as plotting a pixel using COLOR 5 in mode 10.

Uses for GTIA Character Graphics

There are many uses for GTIA character graphics. Games with animated objects are possible using ordinary POSITION and PRINT statements. Techinques such as scrolling and page flipping, impractical with the standard GTIA modes because of their exorbitant memory requirements, are now possible using GTIA character graphics. In fact, Murder on the Zinderneuf from Electronic Arts uses GTIA character graphics to present the long scrolling map of the Zinderneuf on the screen.

The main disadvantage with using character graphics rather than standard graphics is that a character set has only 128 characters. The other 128 characters are the first 128 in inverse video. If a GTIA character is printed in inverse its colors will be complemented, e.g., the inverse of a color is 16 minus that color. For example, when COLOR 2 is printed in inverse it becomes 16-2 or 14.

Even with the limitations that character graphics have when compared to bitmap graphics, GTIA character graphics are just perfect when you need lots of colors on the screen in a small amount of memory. All that's needed now is your imagination.

```
0 REM PROGRAM 1
10 REM DIMENSION STRINGS FOR STORAGE O
F CHARACTER SETS
20 DIM RAM$(1),ROM$(1)
30 REM THIS IS A METHOD OF COPYING
40 REM CHARACTER SETS BY USING
50 REM TWO STRINGS - ONE IN RAM AND
60 REM ONE STARTING AT THE SAME
70 REM LOCATION AS THE ROM CHARACTER
80 REM SET.  THIS SECTION FINDS THE
90 REM STARTING ADDRESS OF STRING
100 REM STORAGE IN MEMORY AND THE
110 REM TABLE WHERE VARIABLES ARE STOR
ED
120 VTAB=PEEK(134)+256*PEEK(135)
130 ATAB=PEEK(140)+256*PEEK(141)
150 ROMSET=PEEK(756)
160 OFFSET=ROMSET*256-ATAB:HI=INT(OFFS
ET/256):LO=OFFSET-256*HI
170 POKE VTAB+10,LO:POKE VTAB+11,HI
180 POKE VTAB+12,1:POKE VTAB+13,4:POKE
 VTAB+14,1:POKE VTAB+15,4
190 REM FIND A SAFE PLACE FOR THE RAM
CHARACTER SET
200 RAMSET=PEEK(106)-8:POKE 106,PEEK(1
06)-16:GRAPHICS 0:POKE 752,1
210 REM PLACE RAM$ ON TOP OF CHARACTER
 SET MEMORY
220 OFFSET=RAMSET*256-ATAB:HI=INT(OFFS
ET/256):LO=OFFSET-256*HI
230 POKE VTAB+2,LO:POKE VTAB+3,HI
240 POKE VTAB+4,1:POKE VTAB+5,4:POKE V
TAB+6,1:POKE VTAB+7,4
250 REM CLEAR OUT RAM MEMORY
260 RAM$(1)="{COMMA}":RAM$(1025)="{COM
MA}":RAM$(2)=RAM$
270 REM DO ACTUAL CHSET COPY
280 RAM$=ROM$
290 POKE 756,RAMSET
300 REM PLACE CUSTOM CHARACTERS IN RAM
 CHARACTER SET
310 FOR I=0 TO 15
320 READ A
330 FOR J=1 TO 8
340 BYTE=I*8+J:RAM$(BYTE,BYTE)=CHR$(A)
350 NEXT J
360 NEXT I
370 REM PLACE CUSTOM CHARACTERS ON SCR
EEN
380 FOR X=0 TO 15
390 POSITION X*2+4,11:PRINT CHR$(X+32)
;
400 NEXT X
405 REM LOOP AND CHECK CONSOLE KEYS -
```

```
CHANGE GTIA MODE IF NEEDED
410 IF PEEK(53279)=6 THEN SETCOLOR 4,0
,0:POKE 623,64
420 IF PEEK(53279)=5 THEN SETCOLOR 4,0
,0:POKE 623,128
430 IF PEEK(53279)=3 THEN SETCOLOR 4,0
,8:POKE 623,192
440 IF PEEK(53279)=7 THEN SETCOLOR 4,0
,0:POKE 623,0
450 GOTO 410
460 DATA 0,17,34,51,68,85,102,119,136,
153,170,187,204,221,238,255


0 REM PROGRAM 2
10 DIM ROMSET$(1),B$(1),F$((INT(ADR(B$
)/2048)+1)*2048-ADR(B$)-1),CHSET$(2049
),DD$(1023),P0$(256),P1$(256)
20 DIM P2$(256),P3$(256)
30 GOSUB 1960
40 GOSUB WINDOWCLR:POKE 656,0:POKE 657
,2:PRINT "CHAR #";CH;" ";:POKE 657,15:
PRINT "COLOR ";C;" ";
50 POKE 656,1:POKE 657,2:PRINT "OPTION
 - Save/load character font":PRINT "SE
LECT - Select character to edit"
60 PRINT "START  - Select GTIA mode an
d colors";:CX=29:CY=14:OCY=14
70 REM MAIN LOOP
80 ST=STICK(0)
90 DY=(ST=13)-(ST=14)
100 IF ST=11 AND CX=48 THEN CX=29
110 IF ST=7 AND CX=29 THEN CX=48
120 CY=CY+7*DY:IF CY<14 THEN CY=63
130 IF CY>63 THEN GOSUB COLCHANGE:GOTO
 40
140 P0$(OCY+34,OCY+45)=BLANK$
150 POKE 53248,CX+81
160 P0$(CY+34,CY+38)=CURSOR$
170 IF STRIG(0)=0 THEN GOSUB PLTPIXEL
180 KEY=PEEK(53279):IF KEY<>7 THEN GOS
UB KEYCHECK:GOTO 40
190 OCY=CY:GOTO 80
200 REM WINDOWCLR
210 REM Clear text window at bottom of
 screen
220 DMEM$(320)=CHR$(0):DMEM$(480)=CHR$
(0):DMEM$(321)=DMEM$(320,480)
230 RETURN
240 REM DRAWBAR
250 REM Draws colored bar on grid
260 FOR Y1=Y TO Y+5
270 PLOT X,Y1:DRAWTO X+8,Y1
280 NEXT Y1
290 RETURN
300 REM CHSELECT
310 REM Select a charcter to edit
320 P0$(CY+32,CY+32+11)=BLANK$:GOSUB W
INDOWCLR
330 POKE 656,3:POKE 657,4:? "Select ch
aracter and press FIRE";:POKE 656,0:PO
KE 657,2:? "INTERNAL CHSET #"
340 CH=0:SX=0:SY=96:OSY=96
350 DX=PTRIG(0)-PTRIG(1):ST=STICK(0)
360 CH=CH+DX*2
370 IF ST=14 THEN CH=CH-40
380 IF ST=13 THEN CH=CH+40
390 IF CH>254 THEN CH=0
400 IF CH<0 THEN CH=254
410 SX=4*(CH-40*INT(CH/40))
420 SY=97+9*INT(CH/40)
430 P0$(OSY+32,OSY+32+11)=BLANK$
440 POKE 53248,SX+46
450 P0$(SY+32,SY+32+11)=CHCRSR$
460 POKE 656,0:POKE 657,18:? CH/2;"  "
;
470 OSY=SY
480 IF ST<>15 THEN POKE 53279,8:POKE 5
3279,0
490 IF STRIG(0)=0 THEN P0$(SY+32,SY+43
)=BLANK$:GOTO 510
500 GOTO 350
510 CH=CH/2:CHAR=CH*8:Y=14:X=29:DMEM$(
20,20)=CHR$(CH)
520 FOR I=0 TO 7
530 BYTE=PEEK(CHSET+CHAR+I)
540 CB=USR(AN,240,BYTE)
550 COLOR CB/16
560 GOSUB DRAWBAR
570 Y=Y+7:NEXT I
580 Y=14:X=38
590 FOR I=0 TO 7
600 BYTE=PEEK(CHSET+CHAR+I)
610 CB=USR(AN,15,BYTE)
620 COLOR CB
630 GOSUB DRAWBAR
640 Y=Y+7:NEXT I
650 COLOR C:RETURN
660 REM KEYCHECK
670 REM Examines console keys and
680 REM branches to appropriate
690 REM routine
700 IF KEY=6 THEN GOSUB GTIAMODE
710 IF KEY=5 THEN GOSUB CHSELECT
720 IF KEY=3 THEN GOSUB SAVFONT
730 RETURN
740 REM COLCHANGE
750 REM Change current editing color
```

```
760 P0$(OCY+34,OCY+45)=BLANK$:GOSUB WI
NDOWCLR:POKE 53248,45
770 P0$(111,123)=CHCRSR$
780 POKE 656,0:POKE 657,4:? "Place cur
sor atop color you wish":POKE 657,9:?
"to use and press FIRE"
790 POKE 656,2:POKE 657,18:? "-OR-":?
"Press upwards to return to edit mode"
;
800 MAX=15:F=10:EXIT=1:GOSUB COLPICK
810 IF EXIT THEN EXIT=0:C=CB:COLOR C
820 P0$(111,123)=BLANK$
830 RETURN
840 REM PLTPIXEL
850 REM Change pixel in character
860 X=CX:IF CX=48 THEN X=38
870 Y=CY
880 GOSUB DRAWBAR
890 CB=C:MASK=240:IF CX=29 THEN CB=C*1
6:MASK=15
900 I=(CY-14)/7
910 BYTE=PEEK(CHSET+CHAR+I)
920 BYTE=USR(AN,MASK,BYTE)
930 BYTE=USR(ORA,CB,BYTE)
940 POKE CHSET+CHAR+I,BYTE
950 RETURN
960 REM GTIAMODE
970 REM Select GTIA mode and colors
980 P0$(OCY+34,OCY+45)=BLANK$:GOSUB WI
NDOWCLR:POKE 53248,46
990 P0$(191,203)=CHCRSR$
1000 POKE 656,0:POKE 657,0:? "_ Change
 Mode";:POKE 657,15:? "_ Change colors
";:POKE 657,32:? "_ Exit"
1010 POKE 656,2:POKE 657,2:? "Place cu
rsor atop choice and ":? "press FIRE";
1020 GOSUB 1310:GOSUB WINDOWCLR
1030 IF I=3 THEN P0$(191,203)=BLANK$:R
ETURN
1040 ON I GOSUB 1060,1160
1050 GOSUB WINDOWCLR:GOTO 1000
1060 REM CHANGE MODE
1070 POKE 656,0:POKE 657,0:? "_ 9";:PO
KE 657,32:? "_ 11";
1080 POKE 656,2:POKE 657,2:? "Select G
TIA graphics mode and":? "press FIRE";
1090 GOSUB 1700
1100 IF CX=174 THEN GOSUB 1140:RETURN
1110 POKE 623,64:POKE 87,9:SETCOLOR 4,
0,0
1120 FOR I=0 TO 7:B$(I*40+1,I*40+40)=B
AR$:NEXT I
1130 RETURN
1140 POKE 623,192:POKE 87,11:SETCOLOR
4,0,8
1150 FOR I=0 TO 7:B$(I*40+1,I*40+40)=B
AR$:NEXT I:RETURN
1160 P0$(191,203)=BLANK$:POKE 53248,45
:P0$(111,123)=CHCRSR$:GOSUB WINDOWCLR
1170 IF PEEK(87)=11 THEN 1240
1180 POKE 623,192:SETCOLOR 4,0,8:POKE
656,1:POKE 657,2:? "Place cursor atop
primary color"
1190 ? "for mode 9 and press FIRE";
1200 MAX=15:F=10:GOSUB COLPICK
1210 SETCOLOR 4,CB,0
1220 POKE 623,64:P0$(111,123)=BLANK$:P
OKE 53248,46:P0$(191,203)=CHCRSR$
1230 RETURN
1240 POKE 623,64:SETCOLOR 4,0,0:FOR I=
0 TO 7:B$(I*40+1,I*40+40)=BAR1$:NEXT I
1250 POKE 656,1:POKE 657,2:? "Place cu
rsor atop primary luminance":? "for mo
de 11 and press FIRE";
1260 MAX=7:F=20:GOSUB COLPICK
1270 SETCOLOR 4,0,CB*2
1280 POKE 623,192:P0$(111,123)=BLANK$:
POKE 53248,46:P0$(191,203)=CHCRSR$
1290 FOR I=0 TO 7:B$(I*40+1,I*40+40)=B
AR$:NEXT I
1300 RETURN
1310 I=1
1320 I=I+(PTRIG(0)-PTRIG(1)):IF I<1 TH
EN I=3
1330 IF I>3 THEN I=1
1340 ON I GOSUB 1390,1400,1410
1350 POKE 20,0
1360 IF PEEK(20)<4 THEN 1360
1370 IF STRIG(0)=0 THEN RETURN
1380 GOTO 1320
1390 POKE 53248,46:RETURN
1400 POKE 53248,106:RETURN
1410 POKE 53248,174:RETURN
1420 REM SAVFONT
1430 REM Save/load font to disk or
1440 REM cassette
1450 P0$(OCY+34,OCY+45)=BLANK$:GOSUB W
INDOWCLR
1460 POKE 53248,46:P0$(191,203)=CHCRSR
$
1470 POKE 656,0:POKE 657,0:? "_ Save";
:POKE 657,15:? "_ Load";
1480 POKE 657,32:PRINT "_ Quit":POKE 6
57,32:PRINT "Program"
1490 POKE 656,2:POKE 657,2:? "Place cu
rsor atop choice and":? "press FIRE";
1500 GOSUB 1310
1510 IF STRIG(0)=0 THEN 1510
```

```
1520 IO=8:CMD=11:IF I=2 THEN IO=4:CMD=
7
1530 IF I=3 THEN X=USR(58484)
1540 POKE 656,0:POKE 657,0:? "_ Disk";
:POKE 657,15:PRINT "      ";:POKE 657,
32:? "_ Cass":POKE 657,32:? "       ";
1550 GOSUB 1700:GOSUB WINDOWCLR:P0$(19
1,203)=BLANK$
1560 IF CX=174 THEN FN$="C:":AUX1=128:
TRAP 1610:LPRINT :GOTO 1610
1570 FN$="D:":AUX1=0
1580 POKE 656,1:POKE 657,2:? "Enter fi
lename";:POKE 752,0
1590 INPUT N$:POKE 752,1:TRAP 1900:IF
N$(1,2)="D:" THEN N$(1,12)=N$(2,LEN(N$
))
1600 FN$(LEN(FN$)+1)=N$
1610 POKE 54286,64:OPEN #1,IO,AUX1,FN$
1620 IOCB1=848
1630 HI=INT(CHSET/256)
1640 POKE IOCB1+4,0:POKE IOCB1+5,HI
1650 POKE IOCB1+8,0:POKE IOCB1+9,4
1660 POKE IOCB1+2,CMD
1670 I=USR(ADR("hhh*LVd"),16)
1680 ERROR=PEEK(IOCB1+3):IF ERROR<>1 A
ND ERROR<>3 THEN POKE 195,ERROR:GOTO 1
900
1690 CLOSE #1:TRAP 40000:POKE 54286,19
2:RETURN
1700 CX=46
1710 POKE 53248,CX
1720 ST=STICK(0)
1730 IF ST=11 AND CX=174 THEN CX=46
1740 IF ST=7 AND CX=46 THEN CX=174
1750 IF STRIG(0)=0 THEN 1770
1760 GOTO 1710
1770 IF STRIG(0) THEN RETURN
1780 GOTO 1770
1790 REM COLPICK
1800 REM Picks color number with curso
r
1810 CB=0
1820 CB=CB+(PTRIG(0)-PTRIG(1))
1830 IF CB<0 THEN CB=MAX
1840 IF CB>MAX THEN CB=0
1850 CX=CB*F:POKE 53248,CX+45
1860 IF EXIT AND STICK(0)=14 THEN EXIT
=0:RETURN
1870 IF STRIG(0)=0 THEN 1890
1880 GOTO 1820
1890 RETURN
1900 REM ***ERROR ROUTINE***
1910 CLOSE #1:POKE 54286,192:GOSUB WIN
DOWCLR
1920 POKE 656,0:POKE 657,2:PRINT "Erro
r - ";PEEK(195)
1930 POKE 656,2:POKE 657,2:PRINT "Pres
s FIRE to continue"
1940 IF STRIG(0)=0 THEN POP :GOTO 40
1950 GOTO 1940
1960 REM *** INITIALIZATION ***
1970 VTAB=PEEK(134)+256*PEEK(135)
1980 ATAB=PEEK(140)+256*PEEK(141)
1990 OFFSET=57344-ATAB
2000 HI=INT(OFFSET/256)
2010 LO=OFFSET-256*HI
2020 POKE VTAB+2,LO:POKE VTAB+3,HI
2030 POKE VTAB+4,1:POKE VTAB+5,4
2040 POKE VTAB+6,1:POKE VTAB+7,4
2050 REM COPY CHARACTER SET INTO RAM
2060 CHSET$=ROMSET$
2070 CHSET=ADR(CHSET$)
2080 GRAPHICS 2+16:POSITION 8,2:PRINT
#6;"GTIA":POSITION 2,4:PRINT #6;"chara
cter editor"
2090 POSITION 8,6:PRINT #6;"-BY-":POSI
TION 3,8:PRINT #6;"mike portuesi"
2100 REM FIRE UP PLAYER/MISSILE GRAPHI
CS
2110 PMBASE=(ADR(DD$)-1)/256
2120 POKE 54279,PMBASE
2130 DD$(1)=CHR$(0):DD$(1023)=CHR$(0):
DD$(2)=DD$
2140 P0$(1)=CHR$(0):P0$(256)=CHR$(0):P
0$(2)=P0$
2150 P1$(1)=CHR$(0):P1$(256)=CHR$(0):P
1$(2)=P1$
2160 P2$(1)=CHR$(0):P2$(256)=CHR$(0):P
2$(2)=P2$
2170 P3$(1)=CHR$(0):P3$(256)=CHR$(0):P
3$(2)=P3$
2180 DIM BLANK$(12),CURSOR$(4),CHCRSR$
(12)
2190 BLANK$(1)=CHR$(0):BLANK$(12)=CHR$
(0):BLANK$(2)=BLANK$
2200 CHCRSR$(1)=CHR$(195):CHCRSR$(12)=
CHR$(195):CHCRSR$(2)=CHCRSR$:CHCRSR$(1
,1)=CHR$(255):CHCRSR$(2)=CHR$(255)
2210 CHCRSR$(11)=CHR$(255):CHCRSR$(12)
=CHR$(255)
2220 FOR I=1 TO 4:CURSOR$(I,I)=CHR$(25
5):NEXT I
2230 Z=45
2240 RESTORE 2260:FOR I=1 TO 7:READ BY
TE:P1$(I+Z,I+Z)=CHR$(BYTE):NEXT I
2250 FOR I=8 TO 50 STEP 7:P1$(I+Z,I+Z+
7)=P1$(1+Z,7+Z):NEXT I:P1$(57+Z,57+Z)=
CHR$(255)
```

```
2260 DATA 255,128,128,128,128,128,128
2270 RESTORE 2290:FOR I=1 TO 7:READ BY
TE:P2$(I+Z,I+Z)=CHR$(BYTE):NEXT I
2280 FOR I=8 TO 50 STEP 7:P2$(I+Z,I+Z+
7)=P2$(1+Z,7+Z):NEXT I:P2$(57+Z,57+Z)=
CHR$(255)
2290 DATA 255,24,24,24,24,24,24
2300 RESTORE 2320:FOR I=1 TO 7:READ BY
TE:P3$(I+Z,I+Z)=CHR$(BYTE):NEXT I
2310 FOR I=8 TO 50 STEP 7:P3$(I+Z,I+Z+
7)=P3$(1+Z,7+Z):NEXT I:P3$(57+Z,57+Z)=
CHR$(255)
2320 DATA 255,1,1,1,1,1,1
2350 REM SET UP DISPLAY LIST AND DISPL
AY MEMORY
2360 DIM DLIST$(118)
2370 DLIST$(1)=CHR$(15):DLIST$(118)=CH
R$(15):DLIST$(2)=DLIST$
2380 RESTORE 2410
2390 READ I,BYTE:IF I=-1 THEN 2420
2400 DLIST$(I,I)=CHR$(BYTE):GOTO 2390
2410 DATA 1,112,2,112,3,112,4,79,95,66
,98,0,99,2,100,0,101,2,102,0,103,2,104
,0,105,2,106,0,107,2,108,0,109,2
2420 DATA 110,0,111,130,112,2,113,2,11
4,2,115,2,116,65,-1,-1
2430 DIM DMEM$(480)
2440 DMEM$(1)=CHR$(0):DMEM$(480)=CHR$(
0):DMEM$(2)=DMEM$
2450 TXTMEM=ADR(DMEM$):HI=INT(TXTMEM/2
56):LO=TXTMEM-256*HI
2460 DLIST$(96,96)=CHR$(LO):DLIST$(97,
97)=CHR$(HI)
2470 WINDOW=TXTMEM+320:HI=INT(WINDOW/2
56):LO=WINDOW-256*HI
2480 GRAPHICS 7:POKE 559,0:POKE 16,64:
POKE 53774,64
2482 FOR I=0 TO 3:POKE 704+I,14:NEXT I
2484 POKE 53277,3
2490 DLIST=ADR(DLIST$):DHI=INT(DLIST/2
56):DLO=DLIST-256*DHI
2500 POKE 560,DLO:POKE 561,DHI
2510 DLIST$(5,5)=CHR$(PEEK(88)):DLIST$
(6,6)=CHR$(PEEK(89))
2520 DLIST$(117,117)=CHR$(PEEK(560)):D
LIST$(118,118)=CHR$(PEEK(561))
2530 POKE 660,LO:POKE 661,HI
2540 POKE 87,9:POKE 623,64:POKE 752,1
2550 POKE 559,62:POKE 756,CHSET/256
2560 POKE 53257,1:POKE 53259,1
2570 POKE 53249,104:POKE 53250,120:POK
E 53251,128
2580 REM INITIALIZE DLI AND M/L ROUTIN
ES
2590 DIM DLI$(16),AN$(16),ORA$(16)
2600 RESTORE 2610:FOR I=1 TO 16:READ B
YTE:DLI$(I,I)=CHR$(BYTE):NEXT I
2610 DATA 72,169,0,141,10,212,141,27,2
08,169,224,141,9,212,104,64
2620 DLI=ADR(DLI$):HI=INT(DLI/256):LO=
DLI-256*HI
2630 POKE 512,LO:POKE 513,HI
2640 POKE 54286,192
2650 RESTORE 2660:FOR I=1 TO 16:READ B
YTE:AN$(I,I)=CHR$(BYTE):NEXT I
2660 DATA 104,104,104,133,212,104,104,
37,212,133,212,169,0,133,213,96
2670 ORA$=AN$:ORA$(8,8)=CHR$(5):LET AN
=ADR(AN$):LET ORA=ADR(ORA$)
2680 REM PLACE CHSET IN WINDOW
2690 FOR X=0 TO 127
2700 DMEM$(41+X*2,41+X*2)=CHR$(X)
2710 NEXT X
2720 REM LABELS FOR ROUTINES
2730 DRAWBAR=240:CHSELECT=300:KEYCHECK
=660:COLCHANGE=740:PLTPIXEL=840:GTIAMO
DE=960:SAVFONT=1420
2740 WINDOWCLR=200:COLPICK=1790:DIM FN
$(14),N$(14)
2750 REM SET UP COLOR BAR STRINGS AND
COLOR BAR
2760 DIM BAR$(40),BAR1$(40)
2770 BAR=PEEK(88)+256*PEEK(89)+3199
2780 OFFSET=BAR-ATAB
2790 HI=INT(OFFSET/256)
2800 LO=OFFSET-256*HI
2810 POKE VTAB+10,LO
2820 POKE VTAB+11,HI
2830 POKE VTAB+12,64:POKE VTAB+13,1
2840 POKE VTAB+14,64:POKE VTAB+15,1
2850 CB=0
2860 FOR X=0 TO 79
2870 COLOR X/5:PLOT X,80
2880 IF ((X+2)/10)=INT((X+2)/10) THEN
CB=CB+2
2890 COLOR CB:PLOT X,81
2900 NEXT X
2910 BAR$=B$(1,40)
2920 BAR1$=B$(41,80)
2930 FOR I=1 TO 7
2940 B$(I*40+1,I*40+40)=BAR$
2950 NEXT I
2960 RETURN


0 REM PROGRAM 3
10 DIM FN$(15):GRAPHICS 0
20 REM PROGRAM 3.
```

```
30 REM CONVERTS FILES PRODUCED BY
40 REM GTIA CHARACTER SET EDITOR (OR
50 REM SUPERFONT) INTO BASIC DATA
60 REM STATEMENTS IN MEMORY.
70 GRAPHICS 0:POSITION 15,0:PRINT "DAT
Amaker"
80 POSITION 2,3:PRINT "Enter name of f
ile to be converted."
90 POSITION 2,5:PRINT "When using disk
, include 'D:' prefix."
100 POSITION 2,7:PRINT "If using casse
tte, enter 'C:'":PRINT :INPUT FN$
110 POSITION 2,11:PRINT "Enter startin
g line number for DATA":POSITION 2,13:
PRINT "statements";:INPUT LINENO
120 OPEN #1,4,0,FN$
130 TRAP 190
140 PRINT "{CLEAR}":POSITION 2,2
150 PRINT LINENO;"D. ";
160 FOR X=1 TO 8
170 GET #1,C:PRINT C;",";
180 NEXT X
190 PRINT CHR$(126);
200 PRINT :PRINT :PRINT "CONT"
210 POSITION 0,0
220 POKE 842,13:STOP
230 POKE 842,12
240 LINENO=LINENO+10
250 IF PEEK(195)=0 THEN 140
260 CLOSE #1:END
```

NEW USER FORUM

by Tom Sturza

You say you still can't tell a bit from a byte? Well, you would if you had attended the first MACE New User Forum on June 24, 1985. One of our goals was to show new users how to use their Atari personal computers, and everyone present seemed to feel that their time was well spent.

We covered the following topics at the first meeting: definitions of computer terminology, DOS 2.0, setting up your Atari system and how AUTORUN.SYS and menu programs work with BASIC language programs. These topics will be covered again at all future meetings, as needs arise.

I would like to express my special thanks to Mike Mitchell, SYSOP of the BAUDVILLE BBS (525-5172), for his assistance and his offer to help with future FORUM meetings. Mike and I would like to encourage other experienced Atari owners to come out and help, too. Give me a call if you are interested.

The New User Forum will meet on the 4th Monday of each month, upstairs at Parks & Recreation, at the Southfield Civic Center (once inside, look for MACE signs). We will start at 7:30 pm and finish with a "question and answer session" ending around 9:30 pm. The next two meetings will be held on 7/22/85 & 8/26/85.

If you have anything special that you would like to see at a future Forum session, please call me between 6-10 pm at 477-2345.

GROUP PURCHASES

Yes, folks, they're back! Here are some more chances for MACE members to get some good deals on software and hardware. The first offer this month comes courtesy of Jim Steinbrecher of Sector One International, who is offering the US Doubler Chip for a mere $50. This chip comes with SpartaDos and will let your 1050 drive run in true double density.

We also have some software specials from Dataworld Distributing:

- BASIC XL cartridge - $49
- MAC65 on disk - $49
- C65 on disk - $49
- ACTION! cartridge - $61
- MAC65 cartridge - $61
- Writer's Toolkit - $61
- DOS XL with BUG65 - $25
- BASIC XL Toolkit - $19
- ACTION! Toolkit - $19
- MAC65 Toolkit - $19
- Trivia Database (disk with book) - $13
- Flight Simulator II - $36

Send your certified check or money order to the MACE PO Box by August 10th. Include your name, address, phone #, and MACE membership number.

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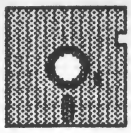
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800XL REVISION B BASIC FIX!

by Matthew Ratcliff
Remote SYSOP
GATEWAY BBS (314) 647-3290

[This article is scheduled to appear in the September '85 issue of Antic magazine. It is printed here with the permission of the author. -Ed.]

Most ATARI 800XL computers produced before the spring of 1985 were equipped with Atari's Revision B BASIC. It was created in an attempt to fix the infamous "keyboard lock-up" bug that was in the original cartridge BASIC. Unfortunately they added several nasty ones in the process.

PRINT PEEK(43234), and if the result is a 96 you have the REV.B(ug!) BASIC. (REV.C - the corrected, bug free version, will return a value of 234.) Common problems are ERROR 9, dimension error at the very line where the DIM statement occurs. Other seemingly random problems can occur, even keyboard lock-up when you "insert" lines to a program in memory. It also adds 16 "garbage" bytes to every SAVE and CSAVE file, and that is cumulative.

```
10 ? FRE(0):SAVE "D:JUNK":RUN "D:JUNK"
```

This "one liner" illustrates the problem. Run it long enough and it will trash your disk, run out of memory, or lock-up the computer! See Bill Wilkinson's "Insight: Atari" in the June '85 issue of Compute! magazine for more complete information. See also my letter in the READER Comment section of the July '85 issue of ANALOG Computing magazine.

The program listing that accompanies this article will create an AUTORUN.SYS file for you. This program automatically loads and "hooks" into the system when you boot it up. It converts your REV.B ROM BASIC to REV.C in RAM! Any time you press RESET the REV.B is re-enabled, but just for a moment. Then this program takes over and converts your system back to REV.C in RAM. You will see a short message at the top of the screen to reassure you that the REV.C RAM BASIC is alive and well.

Should you boot this autorun disk when an external cartridge is installed, the program does nothing. This prevents it from confusing cartridge programs, such as ATARIWRITER.

Type it in and then SAVE and LIST it to disk (the SAVE bug can be a nasty one!). RUN it to create the AUTORUN. Go back and correct typing mistakes (the loader routine helps you there). Once you have a good working version, give copies to all your XL-owning friends. [Matt went out of his way at CES to make sure MACE had a copy of this program---he's sincere when he says to give it out! -Ed.] If it is booted on an XL which has REV.C in ROM, it will inform you and abort (and it won't hurt a thing, so try it!). This program will help you over the REV.B bugs blues until you can acquire a REV.C cartridge from ATARI (for a mere $15.00).

Enjoy!

Mat*Rat's

800XL REV.B ROM to REV.C RAM BASIC Converter

```
1 REM AUTORUN.SYS MAKER FOR 800XL
2 REM REVISION B(UG) TO REV C(ORRECT)
3 REM CONVERTER PROGRAM.
4 REM By Matthew (Mat*Rat) Ratcliff
5 REM of Gateway City BBS 314/647-3290
10 DATA 0,1,2,3,4,5,6,7,8,9,0,0,0,0,0,
0,0,10,11,12,13,14,15
20 DIM D$(90),HEX(22):RESTORE 32000
30 READ LASTLIN,LNLST:RESTORE 10
40 FOR I=0 TO 22:READ A:HEX(I)=A:NEXT
I
50 LINE=990:RESTORE 1000:PASS=0:DONE=0
60 GRAPHICS 0:POKE 752,1:? "CHECKING D
ATA:"
70 LINE=LINE+10:LN=80:IF LINE=LASTLIN
THEN LN=LNLST:DONE=1
80 POSITION 2,4:? "LINE:";LINE
90 READ D$:IF LEN(D$)<>LN THEN 500
100 DL=PEEK(183)+256*PEEK(184):IF DL<>
LINE THEN ? "LINE(BELL)>>";LINE;" MISS
ING":END
110 FOR X=1 TO LN-1 STEP 2:D1=ASC(D$(X
,X))-48:D2=ASC(D$(X+1,X+1))-48:B=HEX(D
```

```
1)*16+HEX(D2)
120 SUM=SUM+B:IF SUM>999 THEN SUM=SUM-
1000
130 IF PASS THEN PUT #1,B
140 NEXT X
150 READ CK:IF CK<>SUM THEN 510
160 IF  NOT DONE THEN 70
170 IF PASS THEN 210
180 PASS=PASS+1:TRAP 600:CLOSE #1
190 ? "{BELL}DATA GOOD!":? "PRESS RET
URN WHEN DOS DISK READY ";:INPUT D$:D
ONE=0
200 SUM=0:RESTORE 1000:LINE=990:OPEN #
1,8,0,"D1:AUTORUN.SYS":POSITION 2,0:?
"WRITING DATA   ":GOTO 70
210 CLOSE #1:? "{CLEAR}{BELL}* ALL DON
E *":? "WARNING: Be Sure to SAVE this
loader"
220 ? "as a backup, just in case!":GOT
O 520
500 ? "{CLEAR}{BELL}DATA LENGTH ERROR
IN LINE ";LINE:GOTO 520
510 ? "{CLEAR}{BELL}CHECKSUM ERROR IN
LINE ";LINE
520 POKE 752,0:? :END
600 ? "{CLEAR}{BELL}I/O ERROR ";PEEK(1
95);" AT LINE ";PEEK(186)+256*PEEK(187
):GOTO 520
1000 DATA FFFF0006FB06A9008502A9068503
ADFA03F00160ADE2A8C9EAD009A2E9A006A916
4C7406A90085D8,838
1010 DATA A9A085D9A000AD01D329FD8D01D3
B1D848AD01D309028D01D36891D8E6D8D0E4E6
D9A5D9C9C0D0DC,920
1020 DATA A200A90C85DAA000BD8C0685D8E8
BD8C0685D9E8BD8C0691D8E8C6DAD0E8A50909
028509A2B0A006,222
1030 DATA A9398E44038C45038D4803A9008D
4903A90B8D4203A2004C56E4DFA8EAE0A8F0E1
A811E2A8EA29BB,940
1040 DATA 00F3BF00F4BF00F5BF00F6BF00F7
BF00F8BF00F9BF00424153494320526576E43
1B1F52414D206D,222
1050 DATA 6F64739BA0C2F9A0CDE1F4AAD2E1
F4A0206F662047434242532OB3B1B4AFB6B4B7
ADB3B2B9B09BD2,323
1060 DATA C5D6AEC320496E20524F4D21202A
41424F52FC06FE06542A9BE002E1020006,245
32000 DATA 1060,62
```

ENHANCEMENTS TO BASIC

First Byte
P.O. Box 32
Rices Landing, PA 15357
$14.95
Requires 48K and disk drive

Reviewed by Ron Robinson

Do you ever get the feeling that something is missing from Atari BASIC? After all, lots of publication articles are about BASIC automatic numbering or renumbering programs, BASIC English error message programs, BASIC block delete programs, BASIC variable listing programs, BASIC Rev. B to Rev. C converter programs, and most of all, how to talk to DOS from BASIC. Well, as you probably already know, there's just so much you can do with an 8K ROM cartridge. But worse yet, Atari BASIC sometimes locks up, and Rev. B BASIC has more problems yet.

This presents the Atari BASIC user wth several options. You can buy a "real" computer (not unless it plays Star Raiders and Joust!). You can buy a full function BASIC such as Microsoft BASIC or BASIC XL from OSS. They are somewhat expensive and not always 100% compatible with Atari BASIC. There are also programs such as Monkey Wrench from Eastern House and some other disk-based packages that "enhance" Atari BASIC.

Well, a couple of months ago, I mailed $14.95 off to First Byte for their Enhancements to BASIC program. ETB is advertised to work on all Atari's with a minimum of 48K of RAM and Revision A, B, or C Atari BASIC. I really wasn't expecting much for $14.95, but hoped for something that would eliminate the half dozen BASIC utilities that I'm always loading when entering and debugging BASIC programs. What I received far exceeded my expectations.

First of all, there was a letter of apology from the president of First Byte for the delay in shipment. It seems they decided to revise the program so it would be compatible with several Atari DOS's (Atari 2.0 - 2.5 - 3.0, OSS DOS XL, Spartados).

The program creates a boot disk that customizes itself to your particular flavor of Atari computer hardware and version of BASIC. It then generates a disk-based version of BASIC. This means 400/800 owners no longer need to insert the cartridge. XL/XE owners do not need to boot with the OPTION key held down. First Byte also claims to correct the documented causes of 800 and 800XL system lockup and the 16 byte memory expansion bug of Rev. B BASIC in the 800XL. This alone should make the deal attractive to the XL folks with Rev. B BASIC who think it's ridiculous to have to send another $15 to Atari to get a BASIC that works (maybe).

Cold start boot displays a screen with your name, address, and serial number (how do they customize this thing for $14.95?), and a title bar across the top of the screen. The title bar indicates the type of computer on which the program was initialized (800 or XL/XE) and the type of DOS the program recognized at boot time. A menu then allows selecting three levels of enhancement: Half, Full and Full with Trace. These modes use approximately 4K for half mode and 8K for full and full trace modes. Thus, the less enhancement, the more memory for your program. It should be interesting to see if First Byte can modify the program to make use of the expanded memory in the new Atari XE.

I first appreciated the display of error messages in English instead of cryptic codes. No more looking for the book. The next nice touch is the availability of a HELP screen. Enhancements to BASIC then adds the following immediate mode commands to BASIC: automatic line numbering and renumbering, block line deletion, display of disk directory, disk file renaming, disk file locking and unlocking, formatting of disk in single or double density, and changing or listing the variable names used in a program.

Other features available are: DOS access, protecting a BASIC program from editing, sending screen output to the printer, setting screen margins, locking the keyboard, changing key delay/repeat rates, disabling key click, and hex-to-decimal conversion. There is a binary load file for recovering erased DOS 2.0S files.

You can also set up the keys 4, 5, 6, 7, 8, 9, and 0 in conjunction with the CONTROL or CONTROL-SHIFT keys to print strings of characters to the screen with a single key stroke. (If I could just get that with AtariWriter!) This is great for printer control codes and repetitious command or string entry.

Last but not least is a program mode trace function. This function sets up an alternate screen to which program lines are printed as they are being executed. Commands are available to switch between screens at any time, allowing you to observe the lines that are the source of program bugs. This is great for debugging nested loops or for just figuring out the flow of that old program you failed to document since it was obvious how it worked anyway. The documentation is relatively complete, with about 30 pages of plain English and lots of caution notes to point out the "got-ya's".

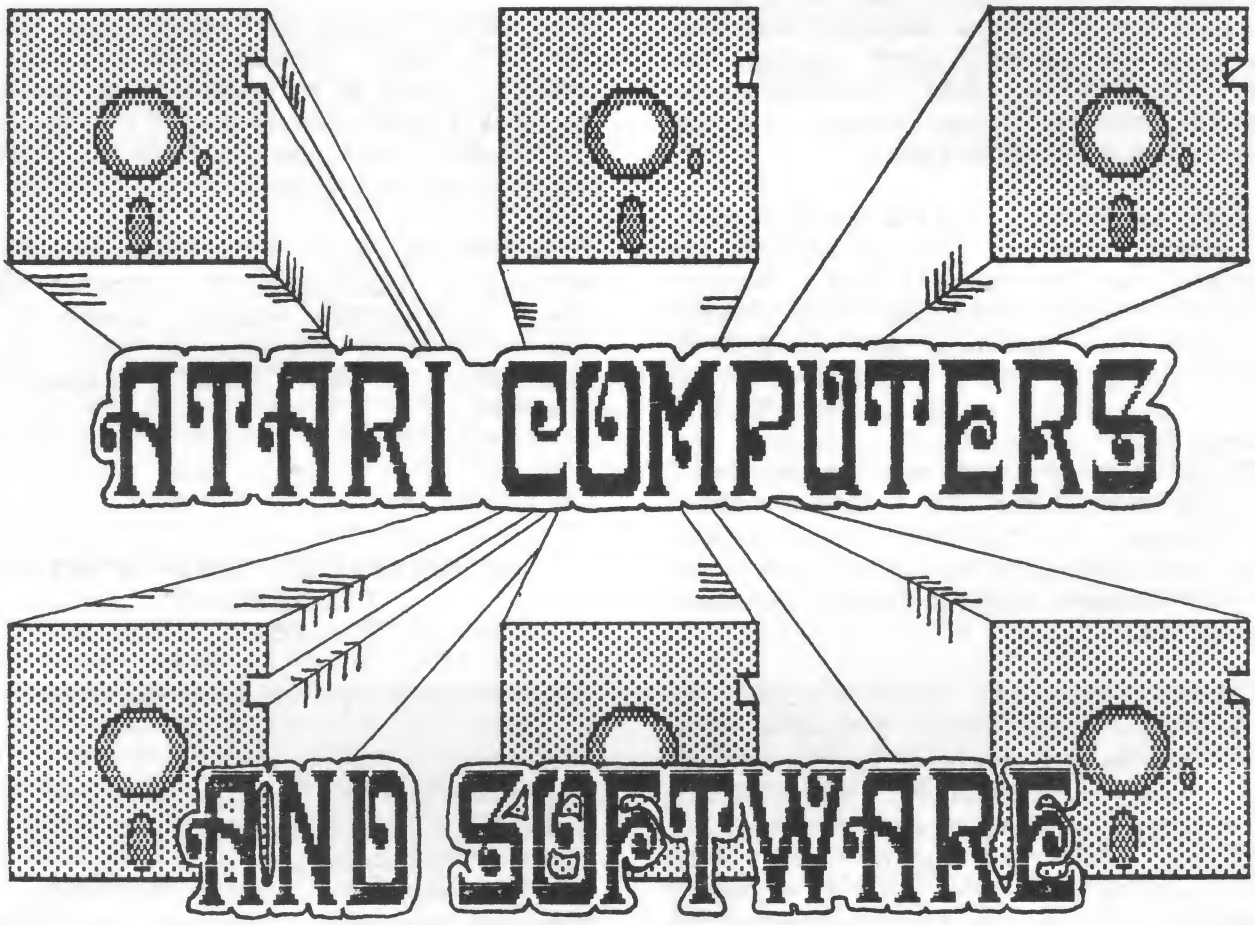
In the constructive criticism department: The program does take up memory space, but you are allowed to specify the level of commands you will need to use, and therefore save space when necessary. Several commands, such as margin width, key click, key repeat rates, etc., would probably be better used if they were definable during the system setup. It would be nice if you could choose screen default colors at setup time also. On an Atari 800, the program crashes (dead screen and keyboard) if you fail to remove the BASIC cartridge. First Byte does give fair warning that ETB is designed to aid in the writing and debugging of BASIC programs, and that it really offers no advantage when simply running utility or game programs.

First Byte offers a 30 day full refund guarantee. When was the last time you saw that on a software package? It's really refreshing to find a company willing to put its money where its mouth is and offer a professional quality program at a very reasonable rate.

[This review came to us all the way from Missouri - we'd love to hear from more of our out of state members. -Ed.]

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RS-232 MADE EASY:

Connecting Computers, Printers, Terminals, and Modems

by Martin D. Seyer

(c) 1984, Prentice-Hall, Inc.
214 pages - $18.95

Reviewed by Gary A. Ezzell

What does "RS-232" mean to you? If it is not much more than a familiar buzzword, then this little book may be well worth reading. Its seventy pages of text explain the basic jargon of serial computer communications and the specifics of the RS-232 standard.

This book was written with the novice in mind. The author uses a railway analogy to illustrate the RS-232 standard. Depots, switching booths, bridges, and trains correspond to terminals and computers, modems, lines, and data, respectively. The pace is slow without being tedious. In nine chapters Seyer systematically discusses the various RS-232 signals and how they are used. Each chapter concludes with review questions which range in difficulty from simple fill-in-the-blank sentences to problems which test the reader's comprehension. (Answers are provided.)

The typical Atari user would probably find chapters 2 and 3 most useful. In chapter 2 the author defines and explains terms such as half- and full-duplex, asynchronous transmission, data terminal equipment (such as computers and terminals), and data communications equipment (such as modems). In chapter 3 he explains the functions of the most important RS-232 signals, illustrating their use by computers and modems during the process of creating phone-line connections between computers.

Later chapters explain use of the RS-232 standard in the context of other enviornments, such as those using dedicated private phone lines or synchronous transmission.

The final two chapters get into the interesting problem of how to hook up local peripherals, such as printers, to computers with RS-232 ports. One has to put together a cable, called a "null modem", which emulates a pair of modems connected by a phone line. The author has dedicated more than half of the book to this problem. In these short chapters he presents the theory, and then in over 100 pages of appendices he presents the RS-232 pin assignments for more than 200 computers and peripherals (including the Atari 850 interface) and the cabling requirements to hook them together.

Two other appendices reprint the formal RS-232-C EIA standard and the RS-449 standard which is to supercede it. Another provides a brief description of the "tools of the trade" which are available for putting together and testing RS-232 connections.

In short, the book is a readable, useful, exhaustive examination of a limited topic. There is very little which is specific to the Atari computers. Its value is rather in the generality of the RS-232 standard it describes.

KNIGHTS OF THE DESERT

S.S.I.

Reviewed by Charles M. Hostetler

This game won the "Origins" award for "Best Computer Game of the Year" in 1983. For those of you unfamiliar with "Origins", it is "THE" wargamers annual gathering and manufacturers show. I can't say I knew all the competition, but "Knights" is a great game.

The first (and classic) game on this theatre was "Afrika Korps" (c) 1964 by Avalon Hill. Countless times have I played that game and countless times have I debated supply lines, movement allowances, air points, and battle odds. Well, the old copy may have collector value, but it just doesn't offer much compared to "Knights". Naturally, there is more than computer dice-rolling to these kudos.

There are five scenarios to choose from initially. These range from one turn (there are 18 phases per turn, hence, it's not a "3 minute" quickie) to a 12 turn "campaign" game stretching from March 1941 (when Rommel first made the British look bad) to January 1943 (the end of the war in North Africa was weeks away, the Americans were rapidly approaching from the West, Tripoli fell January 23, etc.). You can "Save Game" after each turn.

The computer will only play the allies, but the options only begin with the scenarios with four basic levels of skill to choose from for each side, optional supply depots for the Axis player, etc. Best of all are the "Ratings" to be chosen for each side giving 10 levels (these "merge" with the skill levels, apparently) for each side varying from 70% to 160% for such aspects as combat, supply, and replacement points.

The characters are done as well as any board game's and the "get" display is a clear and easy system to learn. Care was taken to differentiate German from Italian capacities; and, for once, Italian units are given their just due, being capable of true mechanized battlefield performance, and have different morale rates affecting combat losses.

The map is well done, although one hopes for more imaginative detail in the future, even in the desert. The cardboard map that comes wih the game does leave something to be desired, displaying the "Atari" side with only the rudiments, while the "Apple" map gives a clearer picture of the display. However, one must admit the "Atari" display does conform to the map's elongated hexagons during movement.

Battle sounds are included, though they do get a bit repetitive. I would like to see some variation here, perhaps divebomber sounds where air points are involved.

The rule book is well written and after some play one can begin to understand combat losses and plan accordingly. The commentary on the historical campaign, while demonstrating wide reading on the writer's part, comes out extraordinarily dry. Considering the fact that this campaign is one of the most written about from the Second World War, it's unfortunate that this commentary is so unexciting.

Overall, this is an excellent work of gaming, one that may survive to become a classic. If you like computer wargames, don't miss this one. If you're considering "trying one out" you could do a lot worse and there isn't much better.

HELPFUL HINTS

by Henrietta

Did you know...

Instead of spending $9 to $20 on a disk box, a cheap plastic letter file will do just fine. Make certain your environment is semi-dust free, however.

The proper ribbon replacement for the Gorilla Banana Printer is available at Radio Shack. It is Part # 26-1424. If anyone knows where you can find thermal paper for the Atari 822, let us know (Radio Shack # 26-1332 paper WON'T work -- it binds in the printer).

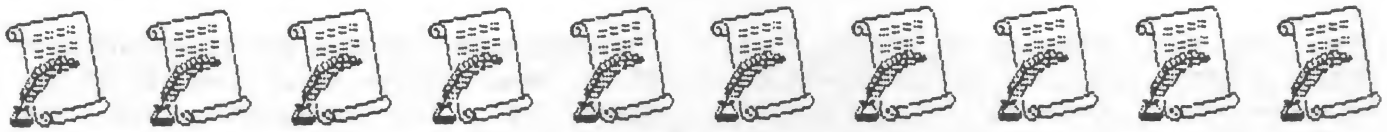
Isopropyl alcohol is the only fluid to use to clean disk drive heads. DON'T use Ethyl alcohol, and don't use the last drop of Southern Comfort alcohol, either!

When approaching Jack Tramiel, be sure to wear a MACE-Commodore Busters T-Shirt. Word is that Jack simply loved them at first sight!

Never plug your joystick plug into 110VAC. Need I say more?

Did you know the new ST computers have a character set in Hebrew? Oy-vey!

Got any more beauties, eh? Send them in to me, Henrietta, and I'll make sure to pass them along to my friends, the members of MACE!



GREETINGS FROM YOUR EDITOR...

Just a few months ago, I was complaining about having to write most of the Journal all by myself - what a turnaround! Except for this, my "Page Zero" column, and a few fillers, this month's Journal is brought to you as it should be: from the members. (Now if I could just get our advertisers to understand what is meant by "camera-ready copy"...)

I would like to thank everyone who contributed to this month's issue, especially Jim Kennedy, who not only downloaded all the CES reports from CompuServe, but also tracked down all those Detroit area Atari and computer sources. Heartfelt thanks also go out to Mike Mitchell for his efforts in getting us some new advertisers. Some of you may know Mike as SYSOP of the BAUDVILLE BBS in Garden City, (313) 525-5172.

Gordon Totty, whose second Journal article appears this month, has a few questions "for the experts". He has a Mannesman Tally Spirit 80 printer and is having a few problems. Perhaps someone who has the same machine could help him out? He would like to be able to use SynTrend with his printer. More generally, he would like to plot graphs on his printer. Does anyone have any recommendations for a screen dump program for this printer? How about it, gang?

Gordon also asked about Allen Software's "Printwiz" - there I can help him (and anyone else who might be interested in this program). I have only used it with my Gemini 10 printer, but the documentation says that it also supports Epson, Nec, Prowriter, Okidata92, Oki82 with Okigraph, Oki84 with Step 2 ROMs, Mannesman-Talley Spirit, DMP-80, IDS Microprism 480 and Panasonic KXP1090 printers.

Now, just what does this program do? The main program lets you do horizontal screen dumps. You load the machine language program and choose your printer, then you can load another program (as long as it doesn't overwrite Printwiz) and dump any display created by that program by simply pressing a few keys. You can center your picture, print it in inverse, change the height and width, or print just part of the screen. You can type on the screen (a use for the 400/800 Memo Pad!) and then dump your text to the printer in assorted sizes; this is how I do most of the captions for the Journal covers.

The main drawback that I have discovered in using Printwiz is that it doesn't handle colors well. If you are looking for a program to print out your Touch Tablet masterpieces, keep looking, because Printwiz just won't satisfy you. If you want to be able to create graphs or charts from BASIC or just from the keyboard, this is the program for you.

The Printwiz disk includes a Lister program which lets you print Atari program listings with all graphics and inverse characters as they appear on the screen. You can choose to print your listing in 38 or 80 column format.

There are also several BASIC demo programs which can help you to understand Printwiz's capabilities. You can load and print MicroIllustrator (KoalaPad and Touch Tablet) and Paint files, use Printwiz with the Atari Logo cartridge, and even load in alternate fonts (three are included) to spice up your screen dumps. Within its restrictions, Printwiz is a very useful utility. It won't do everything, but makes a good addition to your program library.

Hmm - this sort of turned into a program review, didn't it? That's a nice thing about being the Editor - you get to print what you want to. Some of you have been good about telling me what YOU want to read - the rest of you will just have to go along with it, or tell me your preferences. Until next month, enjoy the summer, and don't let your disk drives overheat.

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POWER TO THE PEOPLE!

It's not too soon to start thinking about running for office - MACE elections are coming up in September. Some of this year's officers will be seeking re-election; others will be stepping down. All positions will be open to a general election, though, so don't let an incumbent keep you from the office of your choice.

Any MACE member may run for an elected position, but the President, Vice President and Treasurer must be at least 18 years old.

Anyone interested in running for office is welcome to write a short (1 page or less) article for next month's Journal to act as an introduction to the general membership and to present the candidate's views and/or ideas for MACE. Material must be received by August 5th to be included in the Journal.

MACE SWAP NIGHT

Tuesday, August 20th

Don't forget to contact Program Coordinator Scott Garland to reserve your table space for the MACE Swap Night! You MUST let him know in advance; there will be no walk-ins allowed.

To review the rules:

- Table space is available at no charge to MACE members only, but entry to the hall is open to everyone.

- ONLY original software, hardware, etc. may be offered. Anyone found dealing in pirated software will be expelled from the hall and not allowed to participate in any future Swap Nights.

- If you buy it and it doesn't work, it's not MACE's responsibility. Make sure you can return it if you can't test it at the Swap Night.

MACE JOURNAL LISTING CONVENTIONS

To reduce our readers' eyestrain, we have adopted a special method for listing programs. Programs will be listed in 38 column format, and certain characters will be replaced by an abbreviated form of their function, printed within curly braces (see below). Any characters to be typed in inverse video will be underlined, and control characters will be represented by their respective letters within curly braces. If a character within braces is also underlined, toggle the inverse video on and then hold down the control key while typing the character.

This method may seem awkward at first, but you should quickly get used to it, and the listings will be much easier to read. The special characters which will be spelled out are as follows:

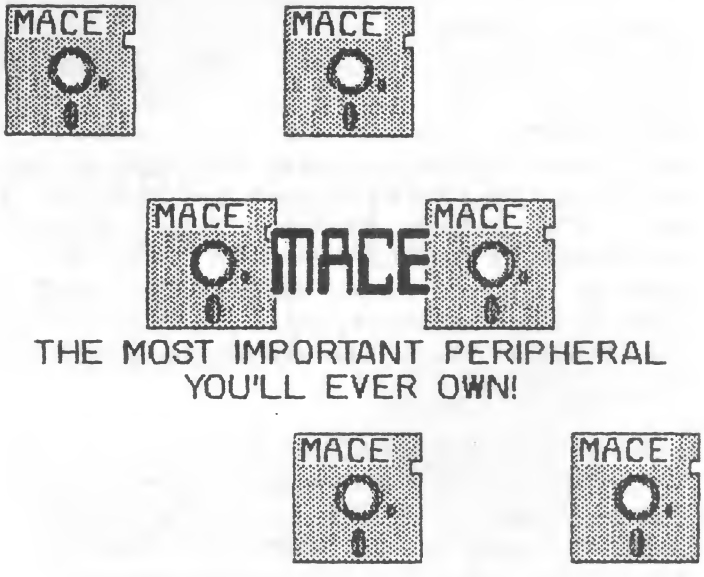
When you see:	You should type:
{CLEAR}	ESC SHIFT <
{UP}	ESC CTRL -
{DOWN}	ESC CTRL =
{LEFT}	ESC CTRL +
{RIGHT}	ESC CTRL *
{BACK S}	ESC DELETE
{DELETE}	ESC CTRL DELETE
{INSERT}	ESC CTRL INSERT
{DEL LINE}	ESC SHIFT DELETE
{INS LINE}	ESC SHIFT INSERT
{TAB}	ESC TAB
{CLR TAB}	ESC CTRL TAB
{SET TAB}	ESC SHIFT TAB
{BELL}	ESC CTRL 2
{ESC}	ESC ESC
{COMMA}	CTRL , (comma)
{PERIOD}	CTRL . (period)
{SEMI-COLON}	CTRL ; (semi-colon)
{SHIFT =}	SHIFT =

If you see:	Type:
{A}	CTRL A
A	INV. VIDEO A
{A}	INV. VIDEO CTRL A

NEW MNEMONICS

Compiled by Suzi Subeck
from Computer Squad Newsletter

code	instruction
AAC	Alter All Commands
AAR	Alter At Random
AIB	Attack Innocent Bystander
AWTT	Assemble With Tinker Toys
BAC	Branch to Alpha Centauri
BAF	Blow All Fuses
BBW	Branch Both Ways
BCIL	Branch Creating Infinite Loop
BOD	Beat On the Disk
BPDI	Be Polite, Don't Interrupt
BPO	Branch on Power Off
BW	Branch on Whim
CBNC	Close, But No Cigar
CDIOOAZ	Calm Down It's Only Ones And Zeroes
CH	Create Havoc
CLBR	Clobber Register
CLBRI	Clobber Register Immediately
CMD	Compare Meaningless Data
CML	Compute Meaning of Life
CNB	Cause Nervous Breakdown
COLB	Crash for Operator's Lunch Break
DBTP	Drop Back Ten & Punt
DBZ	Divide By Zero
DC	Divide and Conquer
DLN	Don't Look Now...
DNPG	Do Not Pass Go
DTVFL	Destroy Third Variable From Left
EBB	Edit and Blank Buffer
EFUD	Emulate Frisbee Using Disk
EIAO	Execute In Any Order
EIOC	Execute Invalid Op-Code
EMPC	Emulate Pocket Calculator
ENF	Emit Noxious Fumes
FLI	Flash Lights Impressively
GFD	Go Forth & Divide
GFM	Go Forth & Multiply
HCF	Halt and Catch Fire
IBP	Insert Bug and Proceed
ISC	Insert Sarcastic Comments
JTZ	Jump to Twilight Zone
LPA	Lead Programmer Astray
MLR	Move and Lose Record
MWT	Malfunction Without Telling
OML	Obey Murphy's Law
P$%!@?	Punch Obscenity
PD	Play Dead
PFD	Punt on Fourth Down
RA	Randomize Answer
RDA	Refuse to Disclose Answer
RIRG	Read Inter-Record Gap
RPM	Read Programmer's Mind
RRSGWSSNK	Round & Round It Goes Where It Stops Nobody Knows
RTS	Return To Sender
RSD	on Read error Self Destruct
SAI	Skip All Instructions
SFH	Set Flags to Half mast
SFT	Stall For Time
SHAB	SHift A Bit
SHABM	SHift A Bit More
SLP	Sharpen Light Pen
STROM	STore in Read Only Memory
TDB	Transfer & Drop Bits
TN	Take a Nap
TPF	Turn Power oFf
TPN	Turn Power oN
TTA	Try, Try Again
UER	Update & Erase Record
ULDA	UnLoaD Accumulator
WBT	Water Binary Tree
WEMG	Write Eighteen Minute Gap
WHFO	Wait til Hell Freezes Over
WPM	Write Programmer's Mind
WWLR	Write Wrong Length Record
WSWW	Work in Strange & Wondrous Ways
ZAR	Zero Any Register



PAGE ZERO

by Ann McBain Ezzell

I got no complaints about last month's column on useful memory locations, and I only got partway through page 2, so I'm going to continue on this month.

560,560 ($230,$231) SDLSTL
The starting address of the display list. You can write a custom display list and change the contents of SDLSTL to point to your new list, or you can alter an existing display list once you know where it is. Appendix 8 of Ian Chadwick's Mapping the Atari (Compute! Books) provides a good introduction to display lists.

564 ($234) LPENH
Reads the horizontal value of the light pen.

565 ($235) LPENV
Reads the vertical value of the light pen.

580 ($244) COLDST
Coldstart flag. If this location contains a zero (default), pressing the SYSTEM RESET will not result in reboot. You can POKE 580,1 to make the system reboot whenever SYTEM RESET is pushed. This is useful if you have an AUTORUN.SYS file (a menu, for example) on a disk; otherwise, you will simply lose whatever is in memory.

623 ($26F) GPRIOR
Priority selection register. This location determines the priorities used in player/missile graphics (i.e. which players and/or playfield colors appear to be "in front" of others). The top two bits are used to set up the GTIA modes (9-11). When using player/missile graphics with GTIA modes, you must be sure not to turn off the GTIA mode when setting the priority bits. You must add the values for the desired options, then POKE the sum into 623.

624-631 ($270-$277) PADDL0-PADDL7
Value returned by paddles 0-7, respectively. Values range from 0-228, increasing as the knob is turned counter-clockwise. PADDL0 also returns the horizontal position read from the Atari Touch Tablet; PADDL1 reads the vertical position.

632-635 ($278-$27B) STICK0-STICK3
Values of joysticks 0-3. Values returned depend on which way the stick is pushed:

- up - 14
- down - 13
- left - 11
- right - 7
- up & right - 6
- up & left - 10
- down & right - 5
- down & left - 9
- neutral - 15

636-643 ($27C-$283) PTRIG0-PTRIG7
Paddle triggers 0-7. Zero if paddle trigger is pressed; one if not pressed.

644-647 ($284-$287) STRIG0-STRIG3
Joystick triggers 0-3. Same as for paddle triggers.

674 ($2A2) ESCFLG
Escape flag. Set to 128 if the ESCape key is pressed. Normally zero. It is reset to zero following output of the next character.

694 ($2B6) INVFLG
Inverse character flag. The normal value is 0. You can POKE with 128 to get inverse characters. POKE 694,128 is like hitting the Atari logo/inverse video key. Anything you type after that will appear in inverse video, but if you print out a string that has already been defined as being in normal video, it will print out normally. You can force this location to be 0 to make sure that you will not get any inverse video input in your programs.

702 ($2BE) SHFLOK
Flag for control and shift keys. Zero indicates lowercase, 64 indicates uppercase, and 128 indicates the control key is pressed. You can use this location in conjunction with location 694 to force all keyboard input to be in uppercase, normal video (or whatever configuration you choose).

Out of room again - you'll have to wait until next month to find out what other goodies are to be found in Atari Memoryland. I hope you find some of this information useful.

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IN DEFENSE

An Editorial Reply

By Jon A. Bell
Managing Editor
ANALOG Computing

[This letter was received in response to an editorial by Mike Lechkun which was published in the May '85 Journal. The opinions expressed in that editorial were the author's, and did not represent an official position of MACE or its officers. -Ed.]

Your recent comments concerning the "ad-man's plot" are complete nonsense. Any magazine that would deliberately print errors in an attempt to sucker the readers into buying future issues would be cutting its own throat. The readers would soon detect such a transparent scheme and quit buying the magazine.

We find that by consistently providing the highest-quality Atari programs possible, readers will continue to buy our magazine for more of the same. We have prided ourselves on publishing most issues with no errors whatsoever. When we do find an error, we try to correct it as soon as possible. We also offer assistance to people with technical problems who call our offices. We don't simply tell them to "buy the next issue." I can't speak for the other Atari magazines -- their multitude of errors is not my concern.

We have not received one letter from a reader who believes the "scam" you accuse us of. Perhaps your "scathing" editorial was not applicable to us and our readers?

And finally, your statement about programs on the disk version being different from the printed version! Tom Hudson, head of our technical division, a person of impeccable credentials in the Atari community, is responsible for making our disk and cassette masters. His pithy comment about your statement? "B***s***."

[Mr. Hudson's comment was edited for the sake of the easily offended. -Ed.]

Other Responses

David Duberman, at one time employed on the staff of ANTIC Magazine answered the editorial, explaining the problems with their typesetter. "We would send them the finished product by modem, and in turn, receive from them characters that their equipment interpreted differently from what we had intended. Only at the last minute did I catch one program ready for publication that was interpreted inaccurately."

Although Mike has taken back the comments he made, he asserts that callers to the MACE EAST BBS have on more than one occasion stated that the disk versions of both ANTIC and ANALOG were different from the printed versions.

COMPUTE! Publications, in the midst of a format change, had no comments on the editorial.

OOPS!!

MACE JOURNAL JOINS THE BIG TIME

At the risk of incurring the wrath of our MACE EAST SYSOP, we must join the likes of Analog and Antic and publish our own corrections column this month. Many of you tried to type in the Creator Program for Ken Alexander's X: Device which was listed in the June issue and discovered that line 1020 was short a few DATA items. I checked the X: Device program itself, but neglected to check the Creator program - mea culpa. At any rate, here is the corrected line 1020 for all our patient readers:

```
1020 DATA 169,34,133,13,169,31,141,231,2,
169,120
```

July issue correction:

The ACE 80 Cartridge was developed by Klaus Buchholz of Amiable Computer Enhancements in Lansing, Michigan. Magic Software are dealers. You can order from Magic Software at (313) 289-1823 or directly from Amiable Computer Enhancements by calling Lance Ward, Vice President, at (517) 393-1357.

"MY COMPUTER"

by Gordon T. Totty

This is sort of a love story, but before it begins I would like to explain it.

The title is deliberately simple, like the titles we used to put on our papers in grade school. So is the idea also simple: write a paper about your computer system. The reasons are equally uncomplicated. We all like to tell about and ask about each other's systems. It's kind of fun, like swapping pictures of our kids or grandchildren. At MACE, don't ask me about my grandchildren (I have none, anyway), but do let me talk with you about computers! Atari computers. I love them, and that's why this is sort of a love story.

And if you read my simple-minded paper I hope you will also be encouraged to write one for the Journal so I and others can read about your system. What you are doing with your system, or how you have it configured, may be very interesting or provide valuable information to others.

I started with a 400, program recorder, 24" color television, BASIC cartridge, Space Invaders, PacMan, and Chess. I was thrilled. This was set up on a card table in our bedroom, about ten feet from the television. "Temporarily," I explained to my wife as she tripped over the wire to the TV. Lasted a year. What a mess!

No one who has not spent months typing games out of COMPUTE! on a membrane keyboard can appreciate how happy I was at last to upgrade the 400 with a "real" keyboard. My formerly throbbing fingertips will never forget, and if any of you are still living with an unmodified 400 you have my deepest sympathy. But you can't buy mine; I sold it when Atari had the factory closeout sale on 800's about 18 months ago.

At last I had a real computer! To the 800, I added an Indus GT drive and permanently retired the second biggest mistake in history, the program recorder. That slow, unreliable, maddening machine. (The biggest mistake still has to be the membrane keyboard!) After over a year, I still sit and smile like an idiot just listening to the pleasant chirps of data entering RAM off the disk at what seems like lightning speed. Wow!

Presently, I also have the hardware listed below:

* Atari 1050 disk drive
* Atari 800XL
* Teknika MJ-10 color monitor
* Mannesmann Tally Spirit 80 printer
* Atari Touch Tablet

My evaluation of each of these, in turn, follows.

The Atari 1050 is my drive number 2. I keep it that way so it gets less use. It seems slower than the Indus, but that might just be my imagination, triggered by the noise this thing makes. The Indus is very quiet in operation. My 1050 sounds like a meat grinder, which amuses me somewhat. I have been told that the Atari drives vary greatly from unit to unit, and some are much quieter than others. I got a grinder! DOS 3.0 at first impressed me, because the documentation seemed better than that which I got with the Indus. Fortunately, I have only one DOS 3.0 disk. The DOS XL (version 2.20) that I got with my Indus is much better, and is the DOS I use at all times now. When K-Mart put the 1050 on sale Indus prices were not at today's levels, or my second drive would have been an Indus.

The 800XL was purchased sort of in panic. Convinced that Atari was heading for bankruptcy (I have a fine head for business!), I bought the XL as a backup for my overall investment. A redundant "mainframe" would protect my investment in dedicated disk drives, software, printer cable/interface, etc. Also I figured that if the 800 needed repair, the repair bill alone might equal the cost of a new XL... assuming repair parts could still be found. I got the XL just in time, too, in December of 1984. I had it figured that Atari would be out of business during the first quarter of 1985. The XL has dropped another 20% in price since my purchase, and the 800 is still in mint condition.

I cannot tell you whether I like the 800 or the XL better. To me, the differences are minor

and I like them both. A friend of mine searched long and hard to buy a used 800, instead of a new XL, because it is a "better" machine. Perhaps somebody who believes this could write to the Journal and explain it, so that if I ever sell one of these I will know which one to keep. I think the 800 might be better if you want to lift the hood and modify the engine, but that is not important to me.

I confess: I almost bought a Commodore product, their monitor. At the last minute, I read about the Teknika MJ-10 and found a store that could get me one at a good price. I am very happy with it. The improvement over the television is real and impressive. Like the Commodore, the Teknika accepts separate chrominance and luminance inputs, which provides better resolution, clarity, and color than a composite video signal can provide. I highly recommend this product.

Ah, my printer. What a love/hate relationship I have with it. The print is, to me, about the best in the price range for dot matrix output. Square pins, according to the manufacturer are the reason for an improved image. I love it. The manual that came with it is unintelligible to me. I hate it. The printer is quieter than many I have heard. I love it. Mating it with an Atari computer and software has been so much of a challenge that I am frustrated. SynTrend will not run my printer. I hate it. The manufacturer never responded to my letter, begging help. I called them, and was referred to local sales personnel. They referred me to each other, and never returned my calls. The place that sold it to me went out of business, but it doesn't matter because they couldn't have helped. What I have learned is that one should not buy a printer from a store that has never heard of Atari computers. I have also learned that the assurance, "It's Epson compatible," doesn't mean much if you are not reasonably adept at figuring out printer control codes. But you know, I really do love the damn thing! I guess.

The Touch Tablet is an amusing toy. I wish there was more software available for it and do not know why the Koala software suppliers are ignoring it, as Atari seems to be doing also. My kids and I played with it for about a month, but it gathers dust now.

My software includes DOS XL, LOGO, SynCalc, SynFile+, SynTrend, BASIC (of course), AtariWriter, about ten good games, and about thirty not so good games. I hope to write more about software in the future.

The major uses of the computer in my home are correspondence, entertainment, budgeting, taxes, and education. I would like to expand use of the computer for more record keeping, more education, and more programming (which I view as another form of education). I hope to write more about applications, too, in the future.

Using the computer is my hobby. My wife says it is my obsession. I am obsessed with my hobby, I guess. So now I have two grand passions in my life: computers and the other one.

Say, does MACE have a Mannesmann Tally Spirit 80 SIG?



MACE SUPPORT GROUPS

No, Gordon, there is no Mannesmann Tally Spirit 80 SIG, but MACE still does have a few support groups still kicking around. If anyone has any suggestions for special interest groups, please let one of the officers know; we'll see what we can do for you.

New User Forum: 4th Monday of each month at the Civic Center Parks & Recreation Department. Tom Sturza, (313) 477-2345, evenings until 10 pm.

AtariMusic SIG: Mike Lechkun, (313) 978-8432 or MACE EAST BBS, (313) 978-1685,

Forth Interest Group: Tom Chrapkiewicz, (313) 562-8506 or 845-4570 x60.

SIG-ED: Mark Kennedy, (313) 465-5849 evenings.

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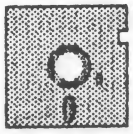


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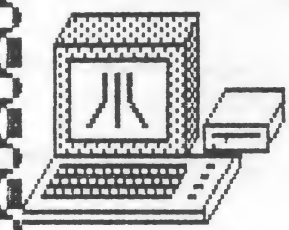
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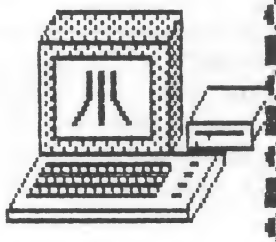
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MORE CES NEWS

[The following articles were downloaded from SIG*ATARI on Compuserve, Inc. by MACE member Jim Kennedy. -Ed.]

From SIG*ATARI on CompuServe, Inc.

An Antic On-Line Special Bulletin

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by Michael Ciraolo

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----------PART 1----------

(Sunday, June 2, 1985)

Chicago, IL--Atari Corp. introduced two new computers at the summer Consumer Electronics Show today,and is expected to make more major announcements tomorrow. Atari introduced two new computers, the 260ST and the 260STD. The 260ST is a 256K version of the 68000-based 16-bit ST machines previously announced by Atari. According to Atari marketing official Brian Kerr, the new machine is expected to retail in the $399 range and will be shipped this fall.

Atari also announced the 260STD, identical to the 260, with the addition of a built-in 3-1/2 inch disk drive. Kerr said the expected price is $499. Both of the 256K machines will have the operating system and Graphics Environment Manager (GEM) built in ROM, according to Kerr. However, the long-awaited 520ST, which is now scheduled for shipping in July, will have an operating system installed in RAM, according to Kerr.

The company is expected to announce a read only memory device in the form of a compact laser disk for use with the new ST computers. Although not officially announced, the CDROM was designed by Activenture in Monterey, Calif. Activenture demonstrated the CDROM privately to Antic shortly before the Consumer Electronics Show, where we learned that the CD has a 500 megabyte capacity.

The first product available on the CDROM is expected to be a 100 megabyte encyclopedia from Grollier. Called an "inverted database" by its developers, the CDROM encyclopedia lets users type in words or strings of words to be searched throughout any portion of the text, all 20 volumes of the encyclopedia. Further details are expected tomorrow, when Atari officials have promised to introduce the product.

----------PART 2----------

(Sunday, June 2, 1985)

Chicago, IL--New products for the 8-bit Atari computers include two new games from Lucasfilm, distributed through Epyx Software. The two games, scheduled for release this fall, are Koronis Rift and The Eidelon.

Lucasfilm team leader Noah Falstein said of his team's game, The Koronis Rift: "It's the year 2249. An ancient coalition of races once existed throughout the galaxy. They've left behind artifacts. You're a techno-scavenger,hunting for artifacts when you find the motherlode of finds, a weapons testing ground." Weapons are the most sellable of items, so you drop down to the surface of Koronis to scavenge. Of course, the ancient races left behind a variety of weapons, defenses and anti-detection devices, all protected by genetically engineered Guardians. There is one remaining Guardian base at the end of the Rift,a Grand Canyon-like chasm, which can only be destroyed with the right combination of weapons systems. "You are armed only with puny weapons when you start," said Falstein. "But you work your way up -- acquiring detection gear, weapons, shields, anti-detection equipment. As you get better equipment, you run into tougher guardians."

Koronis Rift is a multi-strategy game, and there is no one solution to the game. "It takes the right combination of weapon systems to get to the base at the end of the Rift," said

Falstein. "As I see it, this is played the way you play a text adventure. There will be an Encyclopedia Galactica to provide information on the races leaving the systems, and you have to consider clues and strategy to reach the base at the Rift's end." The game also works on other levels. Each weapon system is color coded, so a blue shield is the best defense for a blue laser, not so good for a purple laser, and no good for a red laser.

As one would expect from Lucasfilm, each game is breathtaking, both for game design and for programming innovation. Koronis features a cleaner version of the fractal landscape generator used in Rescue on Fractalus. Not only are you presented with the pilot's view, control panel and overhead monitors, but Koronis also includes incredible GTIA animation produced by Jim St. Louis, who produced the introductory scene in Epyx's final version of Rescue.(Ed. Note: St. Louis was also the artist who created the famous Robot & Rocket demo graphics, used by Atari at the January CES)

The Eidolon takes you back in time, to the 19th century. You've ventured into your uncle's dusty basement, and there it is, dials still glowing. But what is the Eidolon? According to Lucasfilm team leader Charlie Kellner, it's a magic time machine, a la H.G. Wells. The inventor left a few notes, but...

You start up the Eidolon, and find yourself in a cavern. You start running into things, and as they get more fiercesome, you get the feeling you're approaching the center. But of what?

Kellner won't say. But he did let on that the cavern, while immense, is not infinite. Indeed, it's the same cavern each time you play, and thus mappable. "It's partly a voyage of discovery, partly a quest to get to the end," Kellner said.

Eidolon uses animation techniques never before used in home computers, according to Kellner. The characters in the game -- dragons, trolls and greps -- are produced by cel animation, the same technique used to animate Fred Flintstone and other cartoons. Without using Player/Missile graphics, Kellner said, the animation for any one character is composed of four to six overlayed cels (from celluloid). One cel might be a leg; moved, you see a character walking, while the head is held motionless. The Lucasfilm team's programming keeps the creatures moving logically against a three-dimensional background. "The characters are drawn in real-time, directly on the graphics screen," Kellner said.

The games are to be priced in the $29 to $35 range, and will be shipped in the near future. No specific ship date was given by Epyx.

What's next from Lucasfilm? The team leaders wouldn't say, but both did mention their, and George Lucas' goal: interactive movies. While that may be five to ten years away, "interactive cartoons are a good first step," according to Kellner.

----------PART 3----------

(Monday, June 3, 1985)

Chicago, IL -- Imagine always having an encyclopedia available on your Atari, as readable as a conventional book, but as searchable as an industrial database. Imagine, also, that you could search through 26-volume's worth of encyclopedia for term's such as "Costa Rica" and find 57 references in less than three seconds. And imagine a $500 price tag for this technology.

Such technology, under delelopment by Activenture in an exclusive agreement with Atari, was demonstrated at Atari's CES booth today. Called a CDROM, the technology includes a compact laser disk player connected to the direct memory access port (DMA) on an Atari ST, according to Activenture's engineering vice president Tom Rollander. The CDROM can hold a half gigabyte of information (500 megabytes), although the encyclopedia demonstrated occupied only a quarter of the disk's actual space. Rollander told ANTIC that independent publishers would announce specific products for use on the CDROM in the future, starting with the encyclopedia, and with more products introduced in the fall.

Atari officials would not name the exact price or release date of the CDROM, and said they were still discussing whether Activenture or Atari would distribute the product. Rollander said the CDROM "would be available in the fall."

Using the CDROM, you can browse through text, exactly as you might with a hard-copy volume from an encyclopedia, using the mouse for control. You can move foward or backwards by page, choose individual volumes, chapters or entries and so on. You can also specify any section of text for dumping to a printer, Rollander said. Or you can search for specific words or phrases, using powerful techniques familiar to industrial database subscribers. Specify a word or phrase and look for it in all of the text, in bibliographies, in tables, in sub-headings, in specific entries, or in combination with other unspecified terms. Regardless of the search you choose, the computer screen will tell you how many entries were retrieved and let you look at each one. In each case, the text is black on white, with red cursor control and green highlighting of the chosen word.

The amazing speed of the CDROM search is the product of previous indexing, said Rollander. In fact, the computer is not searching the text of the encyclopedia each time, but is searching a specially prepared index, which is larger than the actual text. The full text of the encyclopedia occupies 58 megabytes, while the index structure takes up 60 megabytes. "We've traded hours of processing time on a VAX for the data storage capacity of the compact disk," explained Rollander. His company took the magnetic storage tape used by typesetters and professional database suppliers and dumped an encyclopedia into a VAX computer. Using the VAX, Activenture identified, indexed and cross-indexed 141,000 unique words in the text, producing a structure Rollander called "an inverted database". The entire disk has a half gigabyte capacity, the same amount as 100,500 standard floppy disks, said Rollander.

THE INFORMATION AGE

Atari officials were ecstatic and called the CDROM "the most important innovation since home computers". "This is what computers are all about," said one Atari marketing manager. "This will change everything. This is IT!"

Other reaction to the CDROM was mixed. In a crowd of distributors, retailers and members of the press, many people expressed their enthuiasm to ANTIC. Others were simply speechless. "We asked ourselves 'What are most people doing with computers in the home?' They're using them as doorstops, playing games with them and eventually throwing them in the closet," said Rollander. "Now there's a real reason to use the machines."

"I expect resistance from many publishers, but eventually CDROMs will have greater market penetration than current encyclopedias," Rollander predicted.

Nor is optical storage/inverted database technology limited to encyclopedias. Rollander said the principle may be applied to cookbooks and airline guides, and that his company was talking to a variety of other publishers. "I expect to see publications in the $100 to $150 range at first, dropping to $50 in time," he said. The cost of such optically stored databases is not high for two reasons: Activenture's indexing procedure uses the magnetic tape already in common use by publishers, so computer input is simple, with most books already existing on tape. Rollander also indicated that material stored on microfiche could easily be read, so databases of journals, the New York Times and out-of-print materials could be produced.

Then there's the technology of the compact laser disk. Mastering such a disk costs only a few thousand dollars, and the mass production cost is less than that of magnetic tapes and disks. Because optical disks are mastered and pressed like records,there are no recording heads to wear out and no lengthy time spent making a recording, said Rollander.

INFOMANIACS DELIGHT

There is distinct pleasure in discovering all of the references to a particular word, references that you might never have found if you had simply looked up a primary entry. For instance, Rollander demonstrated a search using the word "toothache". In addition to the expected references under dentistry, he also found mentions in connection with cloves, henbane and certain painful medical procedures developed during the Middle Ages. The CDROM "gives students more appreciation for information than they get by simply looking up the subject," said Rollander.

(ANTIC Note: CDROMs are capable of storing object code (programs) as well as text. In the near future, exclusive Activenture interviews with ANTIC will reveal other potential types of CDROM-based information, such as videotapes, photographs, and software.)

----------PART 4----------

(Tuesday, June 4, 1985)

Chicago, IL -- As companies debut new products for the Christmas buying season, there is enthusiastic interest in developing for both the new and old Atari computers. First the new: The complete line of Infocom text adventure games will be available with the 16-bit Ataris.

Batteries Included announced a major commitment to the ST machines with their "IS" integrated software based on the GEM environment. According to Michael Reichmann, the company's director of product development, the entire line will work at an intuitive level, so that users will not have to memorize any commands. According to the early announcement, the IS line will include a word processor with a built-in spelling checker,a combined spreadsheet and graphics package, a database manager, and a stock portfolio manager. The screen structure and layout are the same for all programs. All programs in the IS series will be released for the Atari STs and the IBM PC and compatible market. The first program, "Portfolio", will be available for the STs shortly after September 1, according to Batteries Included.

The Software Publisher Sierra On-Line will market the submarine simulation game GATO for the STs. GATO puts puts the player in the role of a World War II submarine commander, searching out and attempting to destroy the Japanese Imperial Fleet. Sierra president Ken Williams said, "We want to see exactly how large these two new markets are. We figure the best way to test the unknown waters is to publish a proven product (already out on the IBM, Macintosh and Apple 128K) with a broad appeal for maximum market penetration."

The flight simulator producers SubLogic said they would produce a simulator called Jet, and Electronic Arts is expected to release a financial cookbook, both products for the STs. FTL Software, producers of the Apple II game Sundog, Frozen Legacy, are converting the game over to the Atari STs. The game won Family Computing's award for hybrid games last year -- it is a role-playing economic simulation space adventure. Many of these products were simply announced, with no date or price specified.

Several products for the 8-bit line of computers, including the 130 XE, were also announced. Batteries Included, producers of PaperClip, announced an 80-column display, the "BI-80", for Atari 400/800, XL and XE computers. The BI-80 plugs into the Atari cartridge slot and requires extremely little special programming or software switching to use. The cartridge is expected to cost about $80. Developers said the BI-80 produces a clean, crisp display ideal for writing professional-quality documents. Paperclip will be the first software package released for the Atari BI-80. There was a functioning version of 80-column Atari Paperclip shown at their booth.

According to John Skruch, product manager for the XE line, demand for the new 8-bit computers is so high he can't keep machines on warehouse shelves for over 18 hours. The new XE products Skruch mentioned include programs from First Star Software, Synapse Software, and Adventure International.

Atari is also getting ready to release AtariWriter Plus, currently in final testing, a home productivity package called Silent Butler, and a proofreading program. Skruch said this fall will also see the release of a planetarium program for the XEs that includes over 17000 plotted stars. The program will let users move through time, choose viewing angles, see constellations, track Halley's comet, and so on.

The programs sought by Atari Corp. continue to be application and education software, not games. "Atari Incorporated was a video game company that happened to make computers. We're a computer company that happens to make video games," Skruch said. "There aren't enough applications for the Atari." Skruch also said his company has not released any 65XEs yet, as the nearly identical 800XLs are still available. When the last 800XLs are sold, Atari will start producing the 65XE. "But at the price, the 130XE is still the machine of choice," Skruch said.

----------PART 5 (last)----------

(Tuesday, June 4, 1985)

Chicago, IL--While many companies are introducing one product apiece for the Atari STs, one company has announced an entire line of ST products. Haba Systems, headquartered in Van Nuys, Calif., will release a word processor (HabaWord), a file and report manager (HabaFiles) and a spreadsheet and graphics package (HabaCalc N Graph) in September for $59.95 each, according to Charles Becker, vice president for sales. A communications program, not surprisingly called HabaCom, will be released in August for the same price, Becker said. The company, which produced the integrated spreadsheet, word processor and database Easy Pieces for the Apple, will also release Hippo C and a checkminder program in late July or early August. Becker added that all of the Haba applications will feature pull-down menus and point-and-click editing.

Haba, which has written over 10 products for the Macintosh, will port all of its current and future programs from the Mac to the Jackintosh, starting in January 1985, said Becker. In addition to its line of software, Haba told ANTIC they will sell a 10 megabyte hard disk for $499 and a fully Hayes-compatible modem for $299. These products are called HabaDisk and HabaModem. For people who are less than comfortable or fluent with computers, Haba offers Haba Software Solutions. Each retailing for $49.95, titles include How to Prepare and Manage a Home Budget, how to Write a Resume, How to Start Your Own Business, Business Forms, How to Prepare for the S.A.T., and so on. The 46-member company is named for founder and chief executive officer Chaz Haba, who was director of marketing for Fairchild Semiconductor and who has started several small computer companies.

Becker said the Atari STs' combination of 68000 processor technology, GEM operating system, mouse, serial and parallel ports, 40 and 80 column mode and game (cartridge) port make the ST a "true industry leader," especially in light of Jack Tramiel's "genius for launching exciting, innovative and well-conceived products."

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